

PENDING CLAIMS

1. (Original) A process for the production of flexographic printing plates by thermal development, in which the starting material used is a photopolymerizable flexographic printing element which comprises, arranged one on top of the other, at least

- a dimensionally stable substrate,
- at least one photopolymerizable relief-forming layer, at least comprising an elastomeric binder, ethylenically unsaturated monomers, plasticizer and photoinitiator,

and the process comprises at least the following steps:

- (a) imagewise exposure of the photopolymerizable relief-forming layer to actinic radiation,
- (b) heating of the exposed flexographic printing element to a temperature of from 40 to 200°C,
- (c) removal of the softened, unpolymerized parts of the relief-forming layer with formation of a printing relief,

wherein the elastomeric binder is at least one styrene/butadiene block copolymer having a molecular weight M_w of from 80 000 to 250 000 g/mol and a styrene content of from 15 to 35% by weight, based on the binder, the proportion of butadiene present in 1,2-linked form being at least 15% by weight, based on the binder, and the amount of the styrene/butadiene block copolymer is from 35 to 50% by weight and that of the plasticizer is from 25 to 50% by weight, based in each case on the sum of all components of the relief-forming layer.

2. (Original) A process according to claim 1, wherein the amount of the plasticizer is from 30 to 45% by weight and that of the styrene/butadiene block copolymer is from 35 to 50% by weight, based in each case on the sum of all components of the relief-forming layer.

3. (Previously presented) A process according to claim 1, wherein the proportion of butadiene which is present in 1,2-linked form in the polymer is at least 20% by weight, based on the binder.

4. (Previously presented) A process according to claim 1, wherein the plasticizer is a mixture of plasticizers which comprises at least one polybutadiene oil.
5. (Original) A process according to claim 4, wherein the plasticizer mixture furthermore comprises at least one mineral oil.
6. (Previously presented) A process according to claim 4, wherein at least 40% by weight of the butadiene units in the polybutadiene oil are incorporated in 1,2-linked form.
7. (Previously presented) A process according to claim 1, wherein the relief-forming layer additionally comprises up to 20% by weight of at least one secondary binder.
8. (Previously presented) A process according to claim 1, wherein the imagewise exposure (a) is carried out by positioning a mask on the flexographic printing element and effecting exposure to light through the positioned mask.
9. (Previously presented) A process according to claim 1, wherein the flexographic printing element additionally has a digitally imageable layer and step (a) is carried out by recording imagewise on the digitally imageable layer and effecting exposure to light through the mask thus created in situ.
10. (Original) A process according to claim 9, wherein the digitally imageable mask is a mask selected from the group consisting of IR-ablative masks, inkjet masks and thermographic masks.
11. (Previously presented) A process according to claim 9, wherein the digitally imageable layer or the residues thereof is or are removed from the relief-forming layer before process step (b).
12. (Original) A process according to claim 11, wherein the digitally imageable layer is water-soluble, and the digitally imageable layer or the residues thereof is or are removed with water or a predominantly aqueous solvent before step (b).
13. (Previously presented) A process according to claim 1, wherein the removal of the softened, unpolymerized parts is carried out by bringing the flexographic printing element into contact with an absorbent material.
14. (Previously presented) A process according to claim 1, wherein the removal of the softened, unpolymerized parts is carried out by processing the flexographic printing element with hot air or liquid streams under pressure.

15. (Previously presented) A process according to claim 1, wherein the temperature in step (b) is from 60 to 160°C.